

Criterion A: One World

Achievement Level	Level Descriptor	Clarifications
1–2	The student states how science is applied and used to address a specific local or global issue.	I have STATED how science is applied and used to solve this problem.
	The student states the effectiveness of science and its application in solving the problem or issue.	I have STATED how effective science and its applications are at dealing with this problem.
3–4	The student describes how science is applied to addressing a specific local or global issue.	I have DESCRIBED how science is applied and used to solve this problem (or should be applied)
	The student describes the effectiveness of science and its application in solving the problem or issue.	I have DESCRIBED how effective science and its applications are at dealing with this problem
	The student describes how science and its applications interact with at least one of the following factors: social, economic, political, environmental, cultural and ethical.	I have DESCRIBED how ONE of the social, economic, political, environmental, cultural and ethical factors link to this problem.
5–6	The student describes how science is applied and used to address a specific local or global issue.	I have DESCRIBED how science is applied and used to solve this problem (or should be applied)
	The student describes clearly the effectiveness of science and its application in solving the problem or issue.	I have clearly DESCRIBED how effective science and its applications are at dealing with this problem
	The student describes how science and its applications interact with at least two of the following factors: social, economic, political, environmental, cultural and ethical.	I have DESCRIBED and evaluated how TWO of the social, economic, political, environmental, cultural and ethical factors link to this problem.

Describe: to give a detailed account.

Discuss: to give an account including, where possible, a range of arguments for and against the relative importance of various factors and comparisons of alternative hypotheses.

Evaluate: to assess the implications and limitations.

Explain: to give a clear account, including causes and reasons or mechanisms.

State: to give a specific name, value or other brief answer without explanation or calculation.

Criterion B: Communication

Achievement Level	Level Descriptor	Clarifications
1-2	<p>The student uses a limited range of scientific language correctly.</p> <p>The student communicates scientific information with limited effectiveness.</p> <p>When appropriate to the task, the student makes little attempt to document sources of information.</p>	<p>My work contains some scientific information, not just descriptions or opinions</p> <p>I have attempted to structure my work and get my ideas across</p> <p>I have tried to give some references for my sources of information</p>
3-4	<p>The student uses some scientific language correctly.</p> <p>The student communicates scientific information with some effectiveness.</p> <p>When appropriate to the task, the student documents sources of information with errors.</p>	<p>I have used scientific language to give scientific information</p> <p>My work is mostly well structured (paragraphs, title, introduction, conclusion etc.)</p> <p>I have acknowledged my sources of information mostly accurately</p>
5-6	<p>The student uses sufficient scientific language correctly.</p> <p>The student communicates scientific information effectively.</p> <p>When appropriate to the task, the student documents sources of information appropriately.</p>	<p>I have used scientific language effectively to communicate scientific information</p> <p>My work is all well structured</p> <p>My sources are appropriately documented – used MLA referencing format and attempt in-text citation.</p>

Document: to credit fully all sources of information used by referencing (or citing), following one recognized referencing system. References should be included in the text and also at the end of the piece of work in a reference list or bibliography.

Criterion C: Knowledge and Understanding

Achievement Level	Level Descriptor	Clarifications
1-2	<p>The student recalls some scientific knowledge</p> <p>The student applies some scientific knowledge and understanding to solve problems in familiar situations</p>	<p>I can recall some scientific knowledge</p> <p>I can solve familiar problems using simple scientific knowledge and understanding.</p>
3-4	<p>The student recalls some scientific knowledge and use simple scientific understanding to construct scientific explanations</p> <p>The student applies scientific knowledge and understanding to solve problems in familiar and, with guidance, in unfamiliar situations</p> <p>The student analyses scientific information by identifying components, relationships and patterns and, with guidance, make comments on the validity and quality of the information.</p>	<p>I can recall some scientific knowledge and use simple scientific understanding to construct scientific explanations</p> <p>I can solve familiar problems using simple scientific knowledge and understanding. With guidance, I can solve unfamiliar problems</p> <p>I can examine scientific information by identifying components, relationships and patterns. With guidance, I can make remarks on the validity and quality of the information.</p>
5-6	<p>The student recalls scientific knowledge and use detailed scientific understanding to construct scientific explanations</p> <p>The student applies scientific knowledge and understanding to solve problems in familiar and unfamiliar situations</p> <p>The student analyses and evaluates information critically and make comments on the validity and quality of the information supported by scientific understanding.</p>	<p>I can recall some scientific knowledge and use good scientific understanding to construct scientific explanations</p> <p>I can solve familiar and unfamiliar problems using simple scientific knowledge and understanding.</p> <p>I can carefully examine and evaluate information and make remarks on the validity and quality of the information supported by scientific understanding.</p>

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Criterion D: Scientific Inquiry

Achievement Level	Level Descriptor	Clarifications
1–2	<p>The student attempts to state a focused problem or research question.</p> <p>The method suggested is incomplete.</p> <p>The student attempts to evaluate the method but makes no or unrealistic improvements.</p>	<p>I attempted to state a research question which includes variables. Hypothesis may be missing</p> <p>I attempted to write a method</p> <p>I attempted to evaluate the method and answer the question.</p>
3–4	<p>The student states a problem with a hypothesis and a simple reason.</p> <p>The student acknowledges some of the variables involved and how to manipulate them with errors. The method suggested is mostly complete with errors and includes appropriate materials/equipment.</p> <p>The student makes a statement on the reliability or accuracy of the results and suggests improvements.</p>	<p>I stated a focused problem</p> <p>I identified some relevant variables</p> <p>I made a hypothesis with a simple science explanation</p> <p>My method is mostly complete and has errors.</p> <p>I attempted to evaluate my method and suggested some improvements.</p>
5–6	<p>The student clearly states a question with a testable hypothesis explained using scientific reasoning.</p> <p>The student states relevant variables and how to manipulate them in a clear method.</p> <p>The student comments on the reliability and accuracy of the results.</p> <p>The student suggests realistic improvements to the method.</p>	<p>I clearly stated a focused problem or research question</p> <p>I identified the relevant variables</p> <p>I have a hypothesis which I can test and support with science explanation</p> <p>My equipment list and method clearly explains how to control most variables.</p> <p>I evaluated my method for reliability and validity of results.</p> <p>My improvements are clear and realistic and allow further inquiry</p>

Explain: to give a detailed account of causes, reasons or mechanisms.

Reliability of the method: refers to whether the method allows for the collection of sufficient reliable data to answer the question. This depends upon the selection of the measuring instrument, the precision and accuracy of the measurements, errors associated with the measurement instrument, the size of the sample, the sampling techniques used and the number of readings.

Validity of the method: refers to whether the method allows for the collection of sufficient valid data to answer the question. This includes factors such as whether the measuring instrument measures what it is supposed to measure, the conditions of the experiment and the manipulation of variables (fair testing).

Achievement Level	Level Descriptor	Clarifications
1-2	<p>The student collects and attempts to record and re-organize some data using simple numerical or visual forms.</p> <p>The student attempts to identify a trend, pattern or relationship in the data. The conclusion may not be consistent with the data.</p>	<p>I attempted to collect, organize and present data</p> <p>I attempted to observe a trend</p> <p>I attempted to make an obvious conclusion (may be inappropriate)</p>
3-4	<p>The student collects and records sufficient relevant data and organizes or transforms data into numerical or other visual forms with a few errors or omissions.</p> <p>The student states a trend and draws a conclusion consistent with the data.</p>	<p>I collected and presented the data in a suitable form (table including headings and units)</p> <p>I stated a trend based on the data</p> <p>I drew a conclusion from the data</p>
5-6	<p>The student collects, records and transforms relevant data logically and clearly.</p> <p>The student describes trends, patterns or relationships in the data and draws a clear conclusion based on the correct interpretation of the data.</p>	<p>I collected and presented data logically (including units in table heading)</p> <p>I drew a line / curve of best fit (if appropriate)</p> <p>I described a trend in the data and considered why some data might not fit the suggested trend.</p> <p>I stated a clear conclusion, interpreted from the data</p>

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Criterion F: Attitudes in Science

Achievement Level	Level Descriptor	Clarifications
1-2	The student requires some guidance and assistance to work safely with materials; and the environment and frequent reminders to cooperate with others .	I can use equipment but need help to ensure safety I can work with others but may need reminders.
3-4	The student requires little guidance and assistance to work safely with materials and the environment and cooperates with others on most occasions .	I use most equipment properly with occasional help I paid attention to safety on most occasions I worked responsibly with the living and non-living environment I cooperated well with other students.
5-6	The student requires no guidance to work safely with materials and uses equipment competently . The student always cooperates with others .	I worked mostly independently I used equipment with precision and skill I paid attention to safety I dealt responsibly with the living and non-living environment I worked effectively with my team I collaborated with others and respected their views.